

AMENDMENTS TO THE CLAIMS

Please add new claims 18-20.

1. (CURRENTLY AMENDED) A router comprising:

a first port configured to receive a first frame having
(i) a source media access control (MAC) address, (ii) a first
network layer protocol identification immediately following said
5 source MAC address and (iii) a network layer address following said
network layer protocol identification;

a second port connectable to a Multi-Protocol Label
Switching (MPLS) network; and

a circuit configured to (i) insert ~~an~~ a first MPLS label
10 into said first frame while retaining said first network layer
protocol identification and (ii) present said first frame in said
MPLS network ~~per said MPLS label~~.

2. (CURRENTLY AMENDED) The router according to claim 1,
wherein said circuit is further configured to:

receive a second frame having a second network layer
protocol identification having a difference value than said first
5 network layer protocol identification;

insert ~~said~~ a second MPLS label into said second frame
while retaining said second network layer protocol identification;
and

forward said second frame in said MPLS network in
10 ~~accordance with said MPLS label.~~

3. (CURRENTLY AMENDED) The router according to claim 2,
wherein said circuit is further configured to:

~~establish a path through said MPLS network prior to
forwarding said frame,~~

5 transmit said first frame along ~~said a path in said MPLS
network in response to establishing said path;~~ and

transmit said second frame along said path ~~in response to
establishing said path.~~

4. (CURRENTLY AMENDED) The router according to claim 1,
wherein said circuit is further configured to:

receive a second frame having a second MPLS label and a
second network layer protocol identification; and

5 ~~remove said second MPLS label from said second frame in
response to receiving said second frame, and~~

present said second frame external to said MPLS network
per said second network layer protocol received in said second
frame in response to removing said second MPLS label.

5. (CURRENTLY AMENDED) The router according to claim 1,
wherein said circuit is further configured to:

~~establish a traffic-engineered path through said MPLS network, and~~

5 transmit a plurality of frames having a plurality of different protocol through ~~said a single~~ traffic-engineered path in said MPLS network ~~in response to establishing said traffic-engineered path.~~

6. (ORIGINAL) The router according to claim 5, wherein said transmission through said traffic-engineered path is bidirectional.

7. (CURRENTLY AMENDED) The router according to claim 1, wherein the circuit is further configured to:

~~create an MPLS protocol identification field and an MPLS label stack field between a data link layer address field and a~~
5 network layer protocol identification field in said first frame;
and

 insert said first MPLS label into said MPLS label stack field ~~in response to creating.~~

8. (CURRENTLY AMENDED) A method of operation in a Multi-Protocol Label Switching (MPLS) network comprising the steps of:

(A) receiving a first frame having (i) a source media
5 access control (MAC) address, (ii) a first network layer protocol
identification immediately following said source MAC address and
(iii) a network layer address following said first network layer
protocol identification;

(B) inserting ~~an~~ a first MPLS label into said first
10 frame while retaining said first network layer protocol
identification; and

(C) presenting said first frame in said MPLS network ~~per~~
~~said MPLS label~~.

9. (CURRENTLY AMENDED) The method according to claim 8,
further comprising the steps of:

receiving a second frame having a second network layer
protocol identification different than said first network layer
5 protocol identification;

inserting ~~said~~ a second MPLS label into said second frame
while retaining said second network layer protocol identification;
and

forwarding said second frame in said MPLS network ~~in~~
10 ~~accordance with said MPLS label~~.

10. (CURRENTLY AMENDED) The method according to claim 9,
further comprising the steps of:

~~establishing a path through said MPLS network prior to forwarding said frame,~~

5 transmitting said first frame along ~~said a path in said MPLS network in response to establishing said path;~~ and

transmitting said second frame along said path ~~in response to establishing said path.~~

11. (CURRENTLY AMENDED) The method according to claim 8, further comprising the steps of:

receiving a second frame having a second MPLS label and a second network layer protocol identification; and

5 ~~removing said second MPLS label from said second frame in response to receiving said frame; and~~

presenting said second frame external to said MPLS network per said second network layer protocol identification received in said second frame ~~in response to removing said second~~
10 ~~MPLS label.~~

12. (CURRENTLY AMENDED) The method according to claim 8, further comprising the ~~steps~~ step of:

~~establishing a traffic-engineered path through said MPLS network; and~~

5 transmitting a plurality of frames having a plurality of different protocol through ~~said a single~~ traffic-engineered path in

~~said MPLS network in response to establishing said traffic-engineered path.~~

13. (ORIGINAL) The method according to claim 12, wherein transmitting through said traffic-engineered path is bidirectional.

14. (CURRENTLY AMENDED) The method according to claim 8, wherein step (B) comprises the sub-steps of:

creating ~~an MPLS protocol identification field and an~~ MPLS label stack field between a data link layer address field and
5 a network layer protocol identification field in said first frame;
and

inserting said first MPLS label into said MPLS label stack field ~~in response to creating.~~

15. (ORIGINAL) The method according to claim 8, wherein said MPLS network is defined by a Request For Comment 3031 provided by an Internet Engineering Task Force.

16. (CURRENTLY AMENDED) The method according to claim 8, wherein said steps (A) through (C) are stored in a storage medium as a software program that is readable and executable by a router to insert said first frame into said MPLS network.

17. (CURRENTLY AMENDED) A router comprising:

means for receiving a first frame having (i) a source media access control (MAC) address, (ii) a first network layer protocol identification immediately following said source MAC address and (iii) a network layer address following said first network layer protocol identification;

means for inserting a first Multi-Protocol Label Switching (MPLS) label into said first frame while retaining said first network layer protocol identification; and

means for forwarding said frame in an MPLS network ~~per said MPLS label.~~

18. (NEW) The router according to claim 1, wherein said first frame comprises a Point-to-Point Protocol frame.

19. (NEW) The method according to claim 8, wherein said first network protocol identifier indicates a network layer protocol of data encapsulated by said first frame.

20. (NEW) The method according to claim 9, wherein said first frame and second frame and are both transferred in a same label switched path in said MPLS network.